

MAINSTREAMING SUSTAINABLE HOUSING: POLICIES AND PROGRAMS THAT WORK

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Summary

This paper draws on the findings of research by the Institute for Sustainable Futures (ISF) for the Queensland Environment Protection Agency (QEPA) into attitudes towards sustainable housing. The aim of the research was to examine what drives housing provision and choice from both the housing industry and consumer perspectives, and how sustainability fits within this picture. The research also aimed to demonstrate how this understanding can better inform sustainable housing policy. The research found that for consumers, cost and lifestyle are the most powerful drivers of housing choice. For industry the drivers for action (from product supply and service delivery to building practices) are profit and market edge, both of which are largely driven by perceived consumer demand. There is a significant mismatch between the perceptions of consumers and industry in that each group perceives the other as lacking commitment to advancing sustainability in the housing sector. The study underlined the value of social research in informing sustainable housing policy in the mainstream housing market in order to ensure that these drivers and conflicts are addressed.

1. Introduction – the importance of social research for sustainable housing policy

Governments around the world have implemented a wide range of policies to encourage and underpin the uptake of sustainable housing, covering the full complement of regulatory, fiscal and educational measures. These have had varying degrees of success, and sometimes unexpected and even undesired outcomes.

Currently, much of the research undertaken prior to policy implementation focuses on technical and financial analysis, with little effort put into finding out and understanding what motivates consumers and industry. However, when it comes to what drives action, it is as likely – if not more likely – to be structural or attitudinal factors as technical or financial ones.

If sustainable housing policies are to be effective and supported by both consumers and industry in the mainstream housing sector, there is a need to research and respond to the perceptions and attitudes of the intended recipients. Policy is more robust and effective if it aligns with people's existing drivers for change, while anticipating and addressing barriers to uptake. Even the apparently more predictable regulatory measures can fail to achieve desired outcomes if they are not grounded in an understanding of these drivers.

This paper presents the results of research conducted by the Institute for Sustainable Futures (ISF) for the Queensland Environment Protection Agency (QEPA) on consumer and industry perceptions of sustainable housing. A review of previous research on perceptions of sustainable housing establishes common themes and key questions for investigation. The results of new research conducted in Brisbane for the QEPA are then described, building on themes and issues evident in the literature. The research findings are then used to create a framework for policy to progress sustainable housing.

2. The QEPA project

The project that the Institute for Sustainable Futures (ISF) undertook for the Queensland Environment Protection Agency (QEPA) consisted of two main components; a research element, using primary and secondary research to investigate building industry and consumer perceptions of sustainable housing; and a policy development component, using the findings of the research to inform the development and analysis of a series of policy options. The research included some examination of the social aspects of sustainable housing such as accessibility and health, however the main focus of the research was the environmental aspects of sustainable housing. The research component of this work consisted of three parts:

- A literature review (described in section 2 below)
- Empirical social research, comprising:
 - A series of telephone and face-to-face interviews with key stakeholders
 - Two surveys conducted with visitors to the *HIA Home & Building Expo 2006*, held at the Brisbane Convention & Exhibition Centre from 4 – 7 May 2006 (hereafter referred to as the 'Brisbane Expo survey'). One survey targeted consumers (382 responses), while a smaller survey was aimed at building industry members (142 responses)

The policy development component consisted of three stages:

- Development of a suite of potential policy measures and instruments (informed by the research)

- A stakeholder workshop to present and seek feedback on the research findings and the potential policy measures and their likely impacts
- Refinement of the policy proposals using the workshop outcomes and including an analysis of the costs, benefits and risks associated with each option

These were focused on new housing, but many of the findings would be equally applicable to the home renovation market.

The results of the literature review are discussed in section 2 below, and the findings of the empirical social research summarised in section 3. Section 4 then goes on to explain how the research phases of this work were used to inform policy development.

2. Previous research on consumer and industry perceptions

Previous research into awareness of sustainable housing has produced conflicted results, with literature divided on the extent to which consumers are aware of and interested in sustainability in the residential sector. A number of studies indicate a general lack of awareness and resistance to sustainable housing based on a perception that sustainable housing is less aesthetically attractive and has a lower resale value than traditional housing (see for example, Minnery et al. 2003 cited in Buys et al. 2005; Buys et al. 2004; Clark 2001). A Queensland Department of Housing study identified a relatively low consumer awareness of sustainable housing issues and found that there was little education or information provided to them (Colmar Brunton 2004). Interviews with 421 consumers from Melbourne and Sydney found that only 47% had even heard of 'green' buildings (Trilogy Property Pulse 2005 cited in Iyer-Raniga et al. 2007). Gold Coast water identified lack of awareness as a barrier to the successful uptake of its water efficiency program, evidenced by questions from consumers such as "Will this really save water?" "What does the rating system mean?" and "Which appliance do I buy?" (GHD 2005).

However many Australian and international studies contradict these analyses and there is evidence that consumers are becoming not only more aware of sustainable housing, but more interested and convinced of its value. A US study of consumer approaches to green home buying found that half the market were interested in sustainable buildings, with energy efficiency, indoor air quality and water efficiency the most valued features (Johnston 2001, cited in Iyer-Raniga et al. 2007). Similarly, research undertaken in Melbourne by Trilogy Property Pulse (cited in Iyer-Raniga et al. 2007) found that 85% of 421 survey respondents believed that future developments should be 'environmentally friendly' or 'green'. A survey conducted for the Sustainable Energy Authority Victoria (SEAV) found that of a group of display home visitors interested in a household energy rating, 25% indicated energy use would significantly influence their choice of home (Allen Consulting Group 2002, cited in Kam 2005).

Despite increasing awareness of and support for sustainable housing, much of the literature reports that action is lagging behind expressed intentions. While consumers feel positively about sustainability, these positive attitudes often do not translate into action. This is because consumers do not consider sustainable features in isolation, but in relation to other more significant and often conflicting drivers. As a result, actual uptake of sustainable housing elements – unless regulation mandates implementation – does not match people's expressed support for sustainability as a principle.

The relatively low voluntary uptake of sustainable housing is reported anecdotally and supported by a number of studies. Ambrose et al. (2005) note that uptake of energy efficient design in the residential sector has rarely been voluntary and has primarily followed advances in regulation including amendments to the Building Code of Australia. This is reinforced by Buys et al. (2005), who note that despite increasing consumer awareness about the importance of reducing energy consumption, the uptake of sustainable housing designs and smart technologies remains relatively low. Of 50 homes surveyed by Brisbane City Council about energy efficiency (Brisbane City Council 2002), over half did not consider natural ventilation and more than a third did not consider eaves or window shading. A survey of 3,304 Queensland householders in 2005 found that only 7% use solar hot water systems, with 85.5% using electricity for hot water (OESR 2005).

Cost is the most commonly cited reason for low uptake of sustainable housing (for example Iyer-Raniga 2007; Yudelson 2004 cited in Kam 2005). This is interesting in light of apparent increasing support for sustainable housing. Sibley (2004) suggests that cost is not so much a *motivator* as a *barrier*. Rather than driving consumer choices, cost is a limiting factor for those consumers unable to afford particular initiatives. This implies that cost is a secondary – albeit important – consideration: consumers identify preferred sustainability initiatives first and consider affordability (and consequently rule out particular options) second.

Lack of industry support is also cited as an important barrier to consumer uptake of sustainable housing and a perception exists amongst consumers that the urban development industry generally lacks awareness of sustainable housing. Of 421 Melbourne and Sydney consumers interviewed, 60-70% believed that developers are not interested in the environment (Trilogy Property Pulse 2005 cited in Iyer-Raniga et al. 2007). A Melbourne study of environmentally conscious buyers found that only 3% of 300 people surveyed had received information on environmentally friendly housing from their builder or architect (Sibley 2004).

This forms a significant barrier to wide uptake of sustainable design features, as consumers naturally tend to rely on advice from industry when making choices about house design and construction.

Interestingly, while consumers believe industry has little interest in sustainable housing, the perception from industry is that it is lack of consumer demand that is preventing mainstream adoption of innovative design. In a survey of housing industry representatives in South East Queensland, respondents believed that consumer expectations centre on comfort, lifestyle and resale (HIA 2005). They perceived a general consumer ignorance regarding sustainability issues, and said that whilst they had a role in educating consumers they could only take this up to a point. There was also the perception that consumers would not pay more for sustainable housing (which conflicts to some extent with the consumer literature). The consensus was that without consumer demand industry is not in a position to deliver sustainable housing.

3. Results of new social research on attitudes to sustainable housing in Queensland

The new social research undertaken by ISF for the QEPA explores perceptions of sustainable housing among consumers and industry, and builds on themes and issues evident in the literature described above. Results from this research provide insights into both consumer and industry perceptions of issues relating to sustainable housing. The study also helps understand some of the behaviours and choices that both groups display in response to these issues. The findings of this research are summarised below.

3.1 Consumers

Consumers have a range of perceptions about sustainable housing, some of which support and some of which inhibit the uptake of sustainable housing features, products and services. The study suggests that people feel positive about sustainability and sustainable housing at a conceptual level, as something they aspire to. For example, almost 80 per cent of survey respondents agreed that 'it's important to do the right thing' in the context of sustainable housing. Respondents were also convinced that sustainable housing has the potential to offer them a number of different personal benefits. Almost 65 per cent thought that it could improve their lifestyle, over half thought it could save them money and half thought it could improve the value of their house. Respondents also ranked sustainability highly compared to other factors. In response to the survey question *what is most important to you when buying, building or renovating a home?* respondents ranked environmentally friendliness third overall (below comfort/lifestyle and resale value) when given a list of eight criteria. These results suggest that consumers are predisposed to view sustainable housing positively – at least at the conceptual level. They also have high levels of intent to implement sustainability features. The survey asked whether people had, or intended to, implement a range of specific features (such as rainwater tanks, energy or water efficient fixtures and passive/low energy heating and cooling and so on), and among those who had not already implemented these features the proportion who intended to do so in the future was at least 40 per cent for each of the features. The elements that the highest numbers of people intended to include in the future were rainwater tanks (69 per cent) and energy efficient fixtures (60 per cent).

However, despite positive general perceptions and good intentions, there are also barriers for consumers that may prevent them from translating intent into action, behaviour and purchasing choices. Overall, the biggest barrier to implementing sustainability elements is cost. Perceptions about the cost of sustainable housing tend to be negative – that is, the belief that 'sustainability costs more' is fairly common. This can be seen in two aspects of the research findings. In the survey, when consumers were asked about implementation barriers in relation to a diverse range of sustainability aspects, 'added cost' was consistently named as the biggest barrier. In the stakeholder interviews, the perception that consumers are largely driven by cost was very common. As one interviewee put it, "*Consumers want [sustainability] as a bonus but they don't want to pay for it*". Many interviewees noted that not only are consumers driven by cost, but they also tend to have a narrow, or short-term view of what constitutes 'cost'. It was thought that many were only interested in comparing up-front costs – few considered running costs, or the savings that could be made over time by using more sustainable features. As one person said, "*most consumers base their decisions on 'what can I afford right now?'*"

The ISF survey found that many people do see sustainability as something that has the potential to save them money over time. For example over half the consumers surveyed thought sustainability could potentially save them money or add value to their home. Further, when offered a choice of factors that might encourage them to implement elements of sustainable housing, 'savings on energy and water bills' was overwhelmingly the highest ranked answer.

It is worth policy makers noting this positive cost-related perception, and where possible building on it, by stressing the potential for cost savings over time (for example, through lower bills) and for added asset value. However, while worth pursuing, the potential for this approach may be somewhat limited. Stakeholder interviewees suggested that most consumers still consider cost predominantly in relation to upfront costs and asset/resale value, and that ongoing or running costs are secondary and much less important considerations for most consumers.

Insufficient knowledge is also a barrier, with one in five survey respondents stating that they did not know enough about sustainable housing. However, interviewees generally thought that consumers have become more aware in recent years, particularly in relation to environmental issues:

In general, people are more concerned and smarter about the issues

The consumer base is more educated and more wanting of a greater intersection with sustainability.

Awareness is across a broader cross-section of the population now.

One interviewee suggested that younger people in particular are showing higher levels of awareness, and that their views may be quite influential in the future:

The generations coming through are far more educated about this whole process than their parents were.

However, many of the interviewees suggested that there is a marked difference between what consumers say about sustainability, and what they actually do when it comes to housing choice.

If I just did a general survey of the public out there, you'd get an overwhelming response that, 'yep this [sustainable housing] is good'. But you target the people who are about to build and spend the money; you'll get a totally different answer.

This apparent gap between general attitudes and actions was a key theme of the research, and it is perhaps explained by the fact that consumers are motivated by other important drivers. These certainly include cost, as just discussed, but also important are what might be referred to as 'lifestyle' factors. When asked what was most important to them in their home, 'comfort and lifestyle' was by far the most highly ranked criteria overall, and was also the most popular criteria, with far more respondents ranking it first than any other.

'Lifestyle' is a loose term, used here to refer to a range of factors that are commonly expressed by consumers. 'Lifestyle' factors are most often expressed in terms of comfort and convenience, and can also relate to other aspects like aesthetics, status and the size of the home. The desire to be sustainable can be easily overridden by these considerations. On the face of it, consumer perceptions linking sustainability and the lifestyle driver tend to be largely positive. For example, 65% of consumers surveyed in this research believed that sustainability could improve their lifestyle, and almost none saw sustainability as a lifestyle compromise. However these attitudinal results (particularly the latter) should be interpreted with some caution. The link between this 'lifestyle' driver and cost is difficult to measure, particularly because consumers are less likely to admit to attitudes that conflict with their stated desire to 'do the right thing'. Nevertheless, translating those positive attitudes into action, particularly when it means compromising on comfort or lifestyle, proves challenging for many.

However, while it is true that actions do not always live up to attitudes, and consumers are not keen to 'compromise' comfort or lifestyle, it appears that consumers do at least have a positive perception of sustainability in relation to lifestyle. This indicates the potential for a greater emphasis on the lifestyle benefits of sustainable housing to be used as a policy lever.

3.2 Industry

What emerged from the research as the key drivers for industry when it comes to decisions about sustainable housing were the need to make a profit and the desire to develop or retain a 'market edge' over competitors. These drivers are strongly influenced by perceptions about two things, firstly consumer demand, and secondly the cost and risk of any given action. Perceptions of how sustainability relates to these two drivers are predominantly quite negative, particularly in the mainstream of the housing industry.

Some aspects of industry perceptions and drivers are best understood with reference to certain characteristics of the mainstream housing industry, for it is the particular nature of the industry that appears to influence industry perceptions about the possibilities of sustainable housing. Firstly, the industry is relatively segmented, with different segments playing different and well-defined roles. This means that many industry players are focused fairly narrowly on their own role in the building process, rather than on the 'bigger picture' and their relationships with other segments of the industry. This is illustrated by the fact that 40 per cent of industry respondents to the ISF survey said that the main barrier to implementation of sustainability is that it is often not specified 'upstream' in the process. This appears to mean that individual players 'downstream' feel they have little control or influence over it. The second relevant characteristic of the housing industry, in particular the project home sector, is that it is highly standardised and relies on certain designs, processes, relationships and supply chains that have been gradually developed and refined over time. There are large perceived (and possibly actual) costs and risks in changing these standard ways of working in order to incorporate more sustainability initiatives. Further, in a buoyant market, this is seen as an unnecessary 'experiment'.

Changing housing designs and product supply chains is seen as a significant financial investment, with no guarantee of a financial return. Even if the will to show leadership and change current practice exists on an individual level, it can be constrained by other factors including organisational reluctance, lack of knowledge, insufficient skills or lack of access to training

Another significant finding is that the housing industry is heavily influenced by perceptions of consumer demand. A message that came through very strongly in the interviews was that the industry is highly consumer driven. Many people noted that industry members will only act on sustainability if they see a consumer demand for them to do so:

Our industry is driven by what people ask for, rather than what we give them.

Furthermore, it seems to be a common perception amongst industry members that there is little consumer demand for sustainability, and without such demand, the industry cannot respond. There was a feeling among some people however, that this perception was quite limited, and that if the industry were more proactive on sustainability issues then perhaps consumers would respond:

It's definitely in the hands of the developer or the builder [to stimulate demand]

They [the industry] don't actually realise that it's a chicken and egg argument.

However, others thought that change in industry ultimately must be driven by consumer demand, and that it is the responsibility of governments to educate consumers and create a demand (and hence a market) for sustainability in the housing industry. In this sense, the high degree to which the industry sees itself as demand driven can potentially be positive:

If the public can create the demand, change within the industry tends to flow on very, very quickly.

In general however, and particularly in the 'mainstream' project home market, levels of consumer interest in and demand for sustainability are thought by industry to be low, or even in some cases, non-existent:

Nobody comes into our office and says, "I want the most environmentally friendly house that you've got". Nobody does that. The environment for our customers is way off their radar.

The consumers aren't asking us for choices.

Customers come to us and say, "I want the most amount of house I can get for the least amount of money, and I want it to be big, and I want it to be functional; I want the kids to have big bedrooms".

The main reason for the lack of consumer demand is perceived to be cost of sustainable housing, and the fact that consumers do not see it as an immediate benefit:

Would [consumers] pay an extra thousand dollars knowing that it's going to take them ten years to get that thousand dollars back? No.

If you want people to be environmentally friendly you have to make it instant and you have to make it not cost any more.

Industry perceives cost to be a major driver for consumers, and sees the challenge with sustainable housing to be marketing it in a way that addresses this:

We've got to find a way to target the sustainable housing at the hip pocket because that's where you're going to get the people in.

Further, many interviewees thought that most consumers have not yet reached the point where the issues of sustainability is personally relevant and important to them.

The industry perception of limited consumer demand relates strongly to the profit and market edge drivers. Clearly many industry members are aware of the consumer 'attitude-action gap' discussed above. They feel that while consumers have positive intentions about sustainability, when it comes to implementation their behaviour may not reflect this, and it is their behaviour that industry pays attention to. As a result while the industry is aware of increasing consumer interest in sustainability it is seen as fairly marginal, and certainly not as a key factor that drives decision making. In particular, industry does not believe that consumers are willing to pay more for sustainability. For these reasons, sustainability is not generally seen as a useful differentiator for business. It can even be seen as having the potential to compromise profit and market edge in cost sensitive markets such as the project home market.

The perception that sustainability adds cost was a predominant industry view among the survey respondents. Cost was the most commonly identified barrier to implementing sustainability features, with between 14 and 34 per cent of respondents naming cost as a barrier, depending on the feature.

This perception may be compounded by the typical tendency to treat sustainability as an 'add on' rather than as integral to the house, and therefore to view the costs as additional to the cost of a 'standard' house. It is also affected by levels of knowledge – some industry members, like some consumers, may only be aware of the larger more costly features (such as rainwater tanks and solar cells), and not immediately think of the range of low or no-extra-cost features (such as solar passive design and orientation, or water efficient tapware). Lastly the perception that sustainability adds cost may be related to the lack of experience and skill in incorporating sustainability elements, and the view that 'skilling up' to do things differently will be a time consuming and costly process.

Finally, it is also important to acknowledge that there is a perception predominant in mainstream industry that there is no *need* to change practice. This can be the result of individual lack of interest in sustainability, inertia or attachment to the status quo, or of people not feeling a sense of personal responsibility for change.

There are however, some sectors of industry that hold a more positive view about sustainability. In the ISF survey, almost half the industry respondents thought that sustainability was a way of 'adding value' for their clients, and over a third saw it as potentially adding value to their business. Others are beginning to see

sustainability as a marketing tool, or a means of giving their business a ‘market edge’, particularly if they can target consumers who are both more aware of the issues and capable of making more sustainable choices (although there is a perception that these are likely to be the more educated and wealthier consumers rather than those in the ‘mainstream’, or project housing markets). Some also suggest that sustainability has the potential to improve efficiency and risk management in the industry, by promoting better integration and cooperation between currently fragmented players. Finally, there are industry members, although they are in a minority, who are highly committed to the principle of sustainable housing and are ‘leading the way’ by actively seeking information, exploring options, and developing and trialing new ways of working. The positive examples being set by these motivated individuals can be highly influential within the industry, as they have the potential to inspire others to start moving in a new direction. Building on these more positive perceptions may be a useful approach to the development of sustainable housing policy that seeks to get larger numbers of industry members ‘on board’.

There may also be a need to focus on particular segments of the industry. It was notable that builders were viewed by other industry respondents as being less open to change and in some cases playing a ‘change resistor’ role. Builders tended to be viewed as quite resistant to addressing sustainability issues, particularly where doing so is optional – in other words, where it means taking action beyond compliance with building code requirements. As one interviewee said:

The builders, as a general rule, will only be compliant. They’ll do the minimum they have to, and they’ll fight tooth and nail against anything that’s likely to add any more effort and more challenges for them, or more money to the job.

Part of the reason for this may be that builders are already working to narrow margins, particularly in the first home buyer market. This means that any additional costs of sustainable elements may be seen as difficult to absorb.

It seems that many builders may see themselves as having a limited role in sustainability innovation because they are mainly implementers of other people’s designs and requests, and ‘change followers’ (responding to new directions set by customers, architects and developers). However, there is some evidence to suggest that this is not the case, and that builders can actually exercise a high degree of influence over whether or not sustainable features are chosen (for example Brisbane City Council, 2005). This suggests that if builders were to change their standard offerings to include more sustainable options, consumers may well just accept the new and different inclusions. Product suppliers, subcontractors and sales people were also identified as change followers rather than leaders. It appears that there is substantial scope to work with these various industry groups to help them better understand the level of influence they have, and the potential role that they could play in the change process.

4. Implications of social research for sustainable housing policy

This section discusses the implications of the research findings discussed above for housing policy, and shows how the findings were translated into policy recommendations for the state of Queensland.

The research ISF conducted in this area is based on the firm belief that a ‘technical solution’ will never deliver sustainability on its own, rather there is a critical need to consider the social dimensions of the issue, and design policy in response. Social research is extremely valuable in identifying the key drivers and corresponding perceptions of the target audience for a given policy, and provides a knowledge base that can inform policy development. In the case of sustainable housing policy, strategies that are based on an appreciation of the target audience’s existing drivers and perceptions, and that counter negative aspects and build on positive ones have the best chance of being supported and therefore effective.

4.1 Translating social research into policy

Figure 1 (right) shows the research and policy development process used in this project. The first step was a review of relevant local and international literature, from which research findings were collated and further questions were raised. These findings were tested specifically for Queensland through surveys conducted at the Brisbane Home Show, which collected mostly quantitative data from a statistically significant sample of consumers and industry practitioners. Survey questions were designed to test the previous findings, explore relationships between certain findings and examine some of the

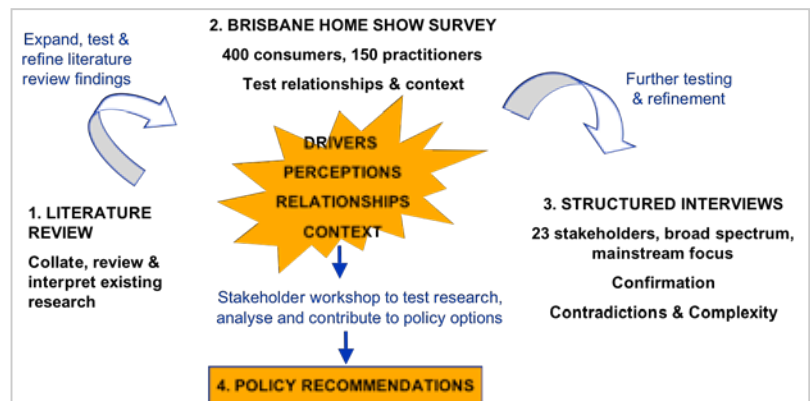


Figure 1 Process for social research and policy development

unanswered questions raised by the previous literature review, for example, “How do perceptions vary based on the specific aspect of sustainability being considered?” and “Is there indeed a gap between attitude and action?” The third and final stage in the social research involved structured interviews with a diverse and carefully selected sample of stakeholders to further test the findings and explore in more detail the complexity and contradictions raised in previous stages of the research.

Then, the drivers and perceptions identified in the research were mapped and translated into potential policy aims. A workshop with key stakeholders from government and the housing industry was held to discuss and further develop policy aims and potential instruments.

Figure 2 Translating drivers into policy (extract)

DRIVERS	PERCEPTIONS	POLICY AIMS	POTENTIAL POLICY INSTRUMENTS
<i>Example drivers:</i> Profit Market edge Cost Resale	Costs more upfront (consumer and industry perception) Limited consumer demand (industry perception)	Reduce upfront costs of sustainable housing	Low interest loan (specific items, or entire home/ renovation) Rebates for sustainable products Fast tracked approvals processes for sustainable developments Development bonuses/ concessions for sustainable developments
	Doesn't add value (consumer and industry perception)	Increase asset/ resale value of sustainable housing	Sustainability rating tool for homes Point of sale disclosure of sustainability performance Home valuation standards that incorporate sustainability
	Compromises market edge (industry perception) (Note: this is a particularly strong perception the in cost constrained project home market)	Improve industry practice in sustainability without compromising market edge (Note: project homes constitute approximately 80% of new housing in South East Queensland)	Voluntary partnership program with project home builders to review designs and supply chain

Figure 2 (above) is an extract of a larger table that shows how drivers and related perceptions were mapped and translated into potential policy aims and instruments. This extract uses money-related drivers (profit, market edge, cost and resale) as an example. For consumers, these money-related drivers primarily relate to capital costs and resale value, and are accompanied by perceptions that sustainable housing costs more upfront and doesn't add value to their property. For the housing industry, drivers relate to market edge and profit, and are accompanied by the perception that consumers aren't interested in sustainability and therefore any cost increase due to sustainability will diminish market edge and profit. This perception was particularly prevalent in the cost-constrained project home market, which attracts a significant proportion of first home buyers and constitutes around 80% of new home sales in the populous and rapidly developing South East Queensland region.

The policy aims were directly translated from drivers and perceptions. This alignment ensures that the policy aims leverage drivers and any positive perceptions, as well as addressing negative perceptions. The policy aims were then used to develop appropriate policy instruments, in collaboration with a number of key government and housing industry stakeholders.

5. Conclusion

Currently much of the research prior to policy implementation focuses on the technical and financial barriers, with little effort put into finding out what will motivate consumers and the industry to take the desired action. However, our research suggests that barriers and drivers are often as much structural or attitudinal as they are technical or financial, if not more so.

If policy is to be effective, there is a need to research and respond to the perceptions and attitudes of the range of intended recipients. Policy is more robust and effective if it aligns with the drivers for change while addressing the barriers. Social research is needed to identify the drivers that can be used to support policy development and implementation, and is a way of indirectly involving recipients (in this case, consumers and the housing industry) in the policy development process.

Furthermore, the intent and implications of policy measures, especially regulatory measures, must be communicated to both consumers and industry. That way technical and fiscal solutions chosen will be well received, which is essential to facilitate implementation and ensure acceptance and uptake.

Until issues related to consumer and industry attitudes and perceptions are addressed by the development of policy that is informed by in-depth social research, the implementation of sustainable housing policies is likely to be difficult, uptake may be lower than expected, and policy may even have undesired outcomes.

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